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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,538	01/23/2004	Sang Woon Suh	1740-000040/US	4972
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EXAMINER				
GHESY, ADAM				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/762,538

Applicant(s)

SUH ET AL.

Examiner

ADAM R. GIESY

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____
- Paper No(s)/Mail Date ____

DETAILED ACTION

Drawings

1. Figures 1A-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-9, 11-18, 20-23, 25-27, and 29-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagasawa et al. (hereinafter Nagasawa – USPN 5,848,050).

Regarding claim 1, Nagasawa discloses a computer readable medium including recorded data, comprising: a control data area including pits formed along tracks, with data recorded therein, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are formed as straight pits, and the wobbled pits are formed intermittently and alternately with the

straight pits within the control data area, and wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits (see Figure 5, elements 15 and 16).

Regarding claim 2, Nagasawa discloses a method of forming a recording medium, comprising: forming pits in a control data area along tracks, with data recorded therein, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are formed as straight pits, and the wobbled pits are formed intermittently and alternately with the straight pits within the control data area, and wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits (see Figure 5, elements 15 and 16).

Regarding claim 3, Nagasawa discloses a method of reproducing data from a recording medium, comprising: detecting control information recorded in pits formed along tracks in a control data area, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are formed as straight pits, and the wobbled pits are formed intermittently and alternately with the straight pits within the control data area, and wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits; and utilizing the control information to reproduce main data recorded with modulation in straight pits formed

along tracks of a main data area of the recording medium (see Figure 5, elements 15 and 16).

Regarding claim 4, Nagasawa discloses all of the limitations of claim 3 as discussed in the claim 3 rejection above and further that the detecting step comprises: converting signals reflected from the wobbled pits into electrical signals; and extracting the control information by applying the electrical signals to a logic circuit (Figure 8, element 24-26 and 28).

Regarding claim 5, Nagasawa discloses all of the limitations of claim 4 as discussed in the claim 4 rejection above and further comprising: reproducing the main data using the control information, and outputting the reproduced main data (see column 10, lines 12-26).

Regarding claim 6, Nagasawa discloses all of the limitations of claim 3 as discussed in the claim 3 rejection above and further that the detecting step detects the control information recorded in pits from a difference signal between a right and a left electric signals, generated by a beam reflected from the pits formed along the tracks (Figure 8, element 26).

Regarding claim 7, Nagasawa discloses all of the limitations of claim 6 as discussed in the claim 6 rejection above and further that the detecting step further detects the main data from a high- frequency electric signal generated by a beam reflected from the straight pits (Figure 8, elements 23 and 26).

Regarding claim 8, Nagasawa discloses a method of recording data on a recording medium, comprising: recording data in pits formed along tracks in a control

data area, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are formed as straight pits, and the wobbled pits are recorded intermittently and alternately with the straight pits within the control data area (see Figure 5, element 15).

Regarding claim 9, Nagasawa discloses an apparatus for reproducing data from a recording medium, said apparatus comprising: a detection unit to detect control information recorded in pits formed along tracks in a control data area, with data recorded therein, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are formed as straight pits, and the wobbled pits are recorded intermittently and alternately with the straight pits, wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits, and wherein the detection unit converts signals reflected from the pits into electric signals (see Figure 5, element 15); and a signal processor, coupled to the detection unit, to process the electric signals to generate the control information and to process main data recorded with modulation in straight pits formed along tracks of a main data area of the recording medium (Figure 8, element 24).

Regarding claim 11, Nagasawa discloses all of the limitations of claim 9 as discussed in the claim 9 rejection above and further that the signal processor is to generate the control information from low-frequency components and generate the main data from high-frequency components (Figure 8, element 24).

Regarding claim 12, Nagasawa discloses all of the limitations of claim 9 as discussed in the claim 9 rejection above and further comprising: a controller, coupled to said detection unit and said signal processor, to control the detection of the control information and the processing of the main data, wherein the controller is to control said signal processor to output the main data based on the control information (Figure 8, element 28).

Regarding claim 13, Nagasawa discloses all of the limitations of claim 12 as discussed in the claim 12 rejection above and further that the controller is to control said detection unit to detect the control information by a push-pull method (see column 10, lines 12-26).

Regarding claim 14, Nagasawa discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the data includes protection information used for controlling reproduction and/or recording of main data (see column 10, lines 56-64).

Regarding claim 15, Nagasawa discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above and further that the data includes protection information used for controlling reproduction and/or recording of main data (see column 10, lines 56-64).

Regarding claim 16, Nagasawa discloses all of the limitations of claim 3 as discussed in the claim 3 rejection above and further that the control information includes protection information for controlling reproduction and/or recording of main data, and

wherein the detecting step detects the protection information (see column 10, lines 56-64).

Regarding claim 17, Nagasawa discloses all of the limitations of claim 8 as discussed in the claim 8 rejection above and further that the data includes protection information used for controlling reproduction and/or recording of main data (see column 10, lines 65-64).

Regarding claim 18, Nagasawa discloses all of the limitations of claim 9 as discussed in the claim 9 rejection above and further that the control information includes protection information used for controlling reproduction and/or recording of the main data, and wherein the controller is to control the reproduction of the main data in response to the protection information (see column 10, lines 56-64; see also Figure 8, element 28).

Regarding claim 20, Nagasawa discloses all of the limitations of claim 14 as discussed in the claim 14 rejection above and further that the protection information is repeatedly encoded in plural arrays of the wobbled pits (see Figure 5, element 15).

Regarding claim 21, Nagasawa discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the control data area comprises arrays of the wobbled pits and arrays of the straight pits periodically (see Figure 5, element 15).

Regarding claim 22, Nagasawa discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that arrays of the wobbled pits and

arrays of the straight pits in the control data area are of different length (see Figure 5, element 15 – note different lengths of each wobbled and straight section).

Regarding claim 23, Nagasawa discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further comprising: a main data area including main data recorded with modulation in straight pits formed along tracks (see Figure 5, element 4).

Regarding claim 25, Nagasawa discloses all of the limitations of claim 15 as discussed in the claim 15 rejection above and further that the same protection information is repeatedly encoded in plural arrays of the wobbled pits (see Figure 5, element 15 - note that the address data which is crucial to the reproduction is included in the header and has arrays of wobbled and non-wobbled pits).

Regarding claim 26, Nagasawa discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above and further that the control data area comprises arrays of the wobbled pits and arrays of the straight pits periodically (see Figure 5, element 15).

Regarding claim 27, Nagasawa discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above and further that arrays of the wobbled pits and arrays of the straight pits in the control data area are of different length (see Figure 5, element 15 – note different lengths of the wobbled and straight pit sections).

Regarding claim 29, Nagasawa discloses all of the limitations of claim 3 as discussed in the claim 3 rejection above and further that the detecting step detects

arrays of the wobbled pits and arrays of the straight pits having different length respectively in the control data area (see Figure 5, element 15).

Regarding claim 30, Nagasawa discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the wobbled pits are formed in more than two data units different from a first data unit (see Figure 5, element 15 and 16 – note the different data units for the wobbled and non-wobbled pits).

Regarding claim 31, Nagasawa discloses all of the limitations of claim 30 as discussed in the claim 30 rejection above and further that the plurality of data units comprise one address unit, and the wobbled pits are formed in more than two data units different from the first data unit within the address unit (see Figure 5, element 15 and 16 – note the different data units for the wobbled and non-wobbled pits).

Regarding claim 32, Nagasawa discloses all of the limitations of claim 31 as discussed in the claim 31 rejection above and further that the wobbled pits are formed in a plurality of address units (see Figure 5, element 15).

Regarding claim 33, Nagasawa discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above and further that the forming step forms the wobbled pits in more than two data units different from a first data unit (see Figure 5, element 15 and 16 – note the different data units for the wobbled and non-wobbled pits).

Regarding claim 34, Nagasawa discloses all of the limitations of claim 33 as discussed in the claim 33 rejection above and further that the forming step includes comprising the plurality of data units into one address unit, and wherein the wobbled

pits are formed in more than two data units different from the first data unit within the address unit (see Figure 5, element 15 and 16 – note the different data units for the wobbled and non-wobbled pits).

Regarding claim 35, Nagasawa discloses all of the limitations of claim 34 as discussed in the claim 34 rejection above and further that the wobbled pits are formed in a plurality of address units (see Figure 5, element 15).

Regarding claim 36, Nagasawa discloses all of the limitations of claim 3 as discussed in the claim 3 rejection above and further that the detecting step includes detecting the wobbled pits formed in more than two data units different from a first data unit (performed by Figure 8, element 24).

Regarding claim 37, Nagasawa discloses all of the limitations of claim 36 as discussed in the claim 36 rejection above and further that the plurality of data units comprise one address unit, and wherein the detecting step includes detecting the wobbled pits formed in more than two data units different from the first data unit within the address unit (see Figure 5, elements 15 and 16).

Regarding claim 38, Nagasawa discloses all of the limitations of claim 37 as discussed in the claim 37 rejection above and further that the wobbled pits are formed in a plurality of address units, and wherein the detecting step includes detecting the wobbled pits formed in the plurality of address units (see Figure 5, elements 15 and 16).

Regarding claim 39, Nagasawa discloses all of the limitations of claim 9 as discussed in the claim 9 rejection above and further that the detection unit is to detect

the wobbled pits formed in more than two data units different from a first data unit (see Figure 8, element 24).

Regarding claim 40, Nagasawa discloses all of the limitations of claim 39 as discussed in the claim 39 rejection above and further that the plurality of data units comprise one address unit, and wherein the detection unit is to detect the wobbled pits formed in more than two data units different from the first data unit within the address unit (see Figure 5, elements 15 and 16).

Regarding claim 41, Nagasawa discloses all of the limitations of claim 40 as discussed in the claim 40 rejection above and further that the wobbled pits are formed in a plurality of address units, and wherein the detection unit is to detect the wobbled pits formed in the plurality of address units (see Figure 5, elements 15 and 16; see also Figure 8, element 24).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19, 24, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagasawa et al. (hereinafter Nagasawa – USPN 5,848,050) in view of Kim et al. (hereinafter Kim – USPN 7,266,074).

Regarding claim 19, Nagasawa discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above. Nasagawa does not disclose bi-phase modulation.

Kim discloses an optical disc wherein wobbled tracks are recorded in biphasic modulation (see column 6, lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the optical disc with both straight and wobbled frames as disclosed by Nasagawa with the bi-phase modulated wobble as disclosed by Kim, the motivation being to reduce the effects of crosstalk interference on the wobble signal.

Regarding claim 24, Nagasawa discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above. Nasagawa does not disclose bi-phase modulation.

Kim discloses an optical disc wherein wobbled tracks are recorded in biphasic modulation (see column 6, lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the optical disc with both straight and wobbled frames as disclosed by Nasagawa with the bi-phase modulated wobble as disclosed by Kim, the motivation being to reduce the effects of crosstalk interference on the wobble signal.

Regarding claim 28, Nagasawa discloses all of the limitations of claim 3 as discussed in the claim 3 rejection above. Nasagawa does not disclose bi-phase modulation.

Kim discloses an optical disc wherein wobbled tracks are recorded in biphasic modulation (see column 6, lines 17-20).

It would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the optical disc with both straight and wobbled frames as disclosed by Nasagawa with the bi-phase modulated wobble as disclosed by Kim, the motivation being to reduce the effects of crosstalk interference on the wobble signal.

Response to Arguments

6. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Verboom et al. (USPN – 5,295,127) discloses wobbled pits used in tracking.

b. Getreuer et al. (USPN – 4,879,707) discloses wobbling pits around the centerline of the track.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM R. GIESY whose telephone number is (571)272-7555. The examiner can normally be reached on 8:00am- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARG 7/27/2008

/Adam R. Giesy/
Examiner, Art Unit 2627

/Wayne Young/
Supervisory Patent Examiner, Art Unit 2627